

CLAIMS

1. A method of fabricating a semiconductor device comprising a semiconductor chip, a tape for mounting said semiconductor chip thereto, an adhesive resin layer interposed between said semiconductor chip and said tape, and solder balls arranged on said tape, said method comprising the steps of:
 - fixing said semiconductor chip to said tape by said adhesive resin layer; and
 - 10 forming at least one hole in said tape after the step of fixing said semiconductor chip to said tape through said adhesive resin layer.
- 15 2. A method of fabricating a semiconductor device, further comprising the step of attaching said solder balls to said tape.
- 20 3. A method of fabricating a semiconductor device according to claim 2, characterized in that said step of attaching solder balls to said tape is executed after the step of fixing said semiconductor chip to said tape by said adhesive resin layer and before the step of forming at least one hole.
- 25 4. A method of fabricating a semiconductor device according to claim 1, characterized in that said step of forming at least one hole is executed such that said at least one hole is formed through said tape using a laser beam and reaches said adhesive resin layer.
- 30 5. A method of fabricating a semiconductor device according to claim 1, further comprising the step of sealing said semiconductor chip with a sealing resin.
- 35 6. A method of fabricating a semiconductor device according to claim 1, characterized in that said step of fixing said semiconductor chip to the tape by said adhesive resin layer includes the step of applying a die bonding material to said tape.
7. A method of fabricating a semiconductor device according to claim 1, characterized in that said step of fixing said semiconductor chip to the tape by the

adhesive resin layer includes the step of attaching a buffer material to said tape and the step of applying a die bonding material to said buffer material.

5 8. A method of fabricating a semiconductor device according to claim 1, characterized in that said step of fixing said semiconductor chip to the tape by said adhesive resin layer includes the step of connecting said semiconductor chip to said tape by protruding electrodes and the step of filling an under-filling material between said semiconductor chip and said tape.

10 9. A semiconductor device comprising a semiconductor chip, a tape for mounting said semiconductor chip thereto, an adhesive resin layer interposed between said semiconductor chip and said tape, and solder balls arranged on said tape, characterized in that said tape and said adhesive resin layer have at least one hole extending through said tape and reaching said adhesive resin layer.

15 10. A semiconductor device according to claim 9, further comprising a sealing resin for sealing said semiconductor chip, said adhesive resin layer comprising a die bonding material for fixing said semiconductor chip to said tape.

20 11. A semiconductor device according to claim 9, further comprising a sealing resin for sealing said semiconductor chip, said adhesive resin layer comprising a buffer material for reducing a stress occurring due to the difference in coefficient of thermal expansion between said semiconductor chip and said tape, and a die bonding material for fixing said semiconductor chip to said tape through said buffer.

25 12. A semiconductor device according to claim 9, characterized in that said semiconductor chip is connected to said tape by protruded electrodes, and said adhesive resin layer is made of an under-filling material filled between said semiconductor chip and said tape.

30 13. A semiconductor device according to claim 9,

characterized in that said tape is a FPC tape.

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14. A semiconductor device comprising a semiconductor chip, a tape for mounting said semiconductor chip thereto, an adhesive resin layer interposed between said semiconductor chip and said tape, and solder balls arranged on said tape, characterized in that said tape is made of a material having high water permeability to prevent cracking and bulging of said semiconductor device which might occur when the solder balls are reflowed after said semiconductor device absorbs moisture.

15. A semiconductor device according to claim 14, characterized in that said tape is made of a resin having water permeability of $10 \text{ g/m}^2 \cdot 24\text{H}$ or more.